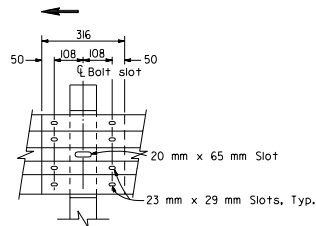
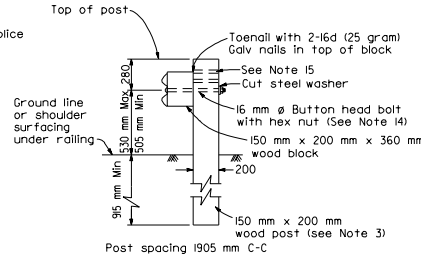


METAL BEAM GUARD RAILING WITH WOOD POST AND BLOCKS

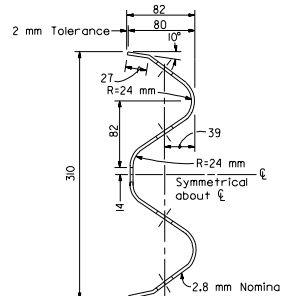


RAIL ELEMENT SPLICE DETAIL

16 mm  $\phi$  x 35 mm button head oval shoulder bolts inserted into the 23 mm x 29 mm slots and bolted together with 16 mm  $\phi$  x 35 mm recessed hex nuts. A total of 8 bolts and nuts are to be used at each rail splice connection. The ends of the rail elements are to be overlapped in the direction of traffic (see details). Where a terminal section or end section is to be attached to the end of a rail element, a total of 4 of the above described splice bolts and nuts are to be used.



See Note 4



See Note 4



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL	PROJECT	SHEET TOTAL
<div> <div> </div> <div> <b>ELLIS K. HIRST</b>  REGISTERED CIVIL ENGINEER </div> </div>					
<div> <div> July 1, 1999  PLANS APPROVAL DATE </div> <div> </div> </div>					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					

## NOTES

- For details of steel post and wood block installations, see Standard Plan A77AA.
- For details of standard hardware used to construct guard railing, see Standard Plan A77B.
- For details of wood posts and wood blocks used to construct guard railing, see Standard Plan A77C.
- For additional installation details, see Standard Plan A77FA.
- Guard railing post spacing to be 1905 mm center to center, except as otherwise noted.
- For guard railing typical layouts, see Standard Plans A77D and A77E.
- For embankment widening details to accommodate guard railing terminal system and treatments, see Standard Plan A77F.
- For typical terminal system end treatments, see Standard Plans A77L, A77M and A77N. For type of terminal system to be used, see Project Plans.
- For guard railing terminal anchor details, see Standard Plans A77G, A77I and A77IA.
- For guard railing connection details to bridge railing, retaining walls and abutments, see Standard Plan A77J.
- For guard railing connection details to bridge sidewalks and curbs, see Standard Plan A77K.
- For dike positioning with guard railing installations, see Standard Plan A77F.
- Direction of traffic indicated by  $\rightarrow$ .
- Where conditions require the bolt to be installed in the opposite direction from that shown in Section A-A or where a 16 mm threaded rod is required in place of the bolt, no more than 13 mm of thread to be exposed on the traffic side of the rail element.
- Additional holes in wood post are required for potential adjustments of railing height. See Standard Plan A77C.
- For guard railing delineation details, see Standard Plan A77F.

## METAL BEAM GUARD RAILING TYPICAL WOOD POST WITH WOOD BLOCK

NO SCALE

ALL DIMENSIONS ARE IN  
MILLIMETERS UNLESS OTHERWISE SHOWN

A77A

1009 STD. PLAN A77A